

What is claimed is:

1. A pattern retrieving method for use with a pattern retrieval apparatus connected to a plurality of terminal devices through a network, comprising:

receiving a retrieval condition, transmitted from each of the plurality of terminal devices together with terminal device information for designation of each of the terminal devices, including a retrieval pattern and a retrieval expression for retrieval of data to be searched;

storing the received retrieval condition and the terminal device information in a retrieval condition buffer;

determining whether or not a preceding retrieving process is being performed;

when it is determined that the preceding retrieving process is not being performed, generating a retrieval pattern variable table in which a retrieval pattern and a first variable having the retrieval pattern as a value are associated with each other if there are two or more identical retrieval patterns in the retrieval patterns stored in the retrieval condition buffer,

generating a retrieval request expression variable table in which the retrieval request expression indicating the retrieval pattern using the first variable and a second variable having the retrieval request expression as a value are associated, and the retrieval request expression indicating the terminal device information and the retrieval expression using the second variable and the second variable having the retrieval request expression as a value are associated based on the retrieval expression and the terminal device information stored in the retrieval condition buffer unit, and the generated retrieval pattern variable table;

transmitting the extracted retrieval result to each of the plurality of terminal devices.

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a retrieval condition reception unit receiving

a retrieval condition, transmitted from each of the plurality of terminal devices together with the terminal device information for designation of each of the terminal devices, including a retrieval
5 pattern and a retrieval expression for retrieval of the data to be searched;

a retrieval condition buffer unit storing the retrieval condition and the terminal device information received by said retrieval condition
10 reception unit;

a retrieving process determination unit determining whether or not a preceding retrieving process is being performed;

a retrieval pattern variable table generation
15 unit generating, when the retrieving process determination unit determines that the preceding retrieving process is not being performed, a retrieval pattern variable table in which a retrieval pattern and a first variable having the
20 retrieval pattern as a value are associated with each other, if there are two or more identical retrieval patterns in the retrieval patterns stored in said retrieval condition buffer units, excluding the retrieval patterns other than one retrieval
25 pattern;

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a retrieval request expression variable table generation unit generating a retrieval request expression variable table in which the retrieval request expression indicating the retrieval pattern
5 using the first variable and the second variable having the retrieval request expression as a value are associated, and the retrieval request expression indicating the terminal device information and the retrieval expression using the
10 second variable and the second variable having the retrieval request expression as a value are associated based on the retrieval expression and the terminal device information stored in said retrieval condition buffer unit, and the retrieval
15 pattern variable table generated by said retrieval pattern variable table generation unit;

a retrieval unit extracting a retrieval result matching the retrieval condition transmitted from each of the plurality of terminal devices by
20 searching said retrieval target data storage unit according to the retrieval request expression variable table generated by said retrieval request expression variable table generation unit; and

a transmission unit transmitting the retrieval
25 result extracted by said retrieval unit to each of

7. The apparatus according to claim 6, wherein
said retrieval condition buffer unit stores
5 the retrieval condition until said retrieving
process determination unit determines that a
retrieving process is completed.

8. The apparatus according to claim 6, wherein
10 said retrieval condition buffer stores the
retrieval condition until a predetermined time is
reached or a predetermined capacity is filled.

9. The apparatus according to claim 6, wherein
15 said retrieval unit simultaneously retrieves a
plurality of retrieval patterns.

10. The apparatus according to claim 6, wherein
said retrieval unit is one of an Aho-Corasick
20 (AC) method, an Expanded-Boyer-Moore (EBM) method,
and a Shinohara-Arikawa (SA) method.

11. A computer-readable storage medium storing a
program code of a pattern retrieval program
25 executed by a pattern retrieval apparatus connected

receiving a retrieval condition, transmitted from each of the plurality of terminal devices together with terminal device information for designation of each of the terminal devices, including a retrieval pattern and a retrieval expression for retrieval of data to be searched;

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        determining whether or not a preceding
retrieving process is being performed;

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                generating a retrieval request expression
25 variable table in which the retrieval request

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extracting a retrieval result matching the
retrieval condition transmitted from each of the
15 plurality of terminal devices by searching the
retrieval target database storing the data to be
searched according to the generated retrieval
request expression variable table; and

12. The storage medium according to claim 11,
wherein

said retrieval condition buffer stores the
25 retrieval condition until it is determined that a

13. The storage medium according to claim 11,
wherein

5 said retrieval condition buffer stores the
retrieval condition until a predetermined time is
reached or a predetermined capacity is filled.

15. The storage medium according to claim 11,
15 wherein
said retrieval is performed in one of an Aho-
Corasick (AC) method, an Expanded-Boyer-Moore (EBM)
method, and a Shinohara-Arikawa (SA) method.

each of said plurality of terminal devices
25 comprises:

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said pattern retrieval

a retrieval tar

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a retrieving pr

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a retrieval request expression variable table generation unit generating a retrieval request expression variable table in which the retrieval request expression indicating the retrieval pattern using the first variable and the second variable having the retrieval request expression as a value are associated, and the retrieval request expression indicating the terminal device information and the retrieval expression using the second variable and the second variable having the retrieval request expression as a value are associated based on the retrieval expression and the terminal device information stored in said retrieval condition buffer unit, and

a retrieval unit extracting a retrieval
5 result matching the retrieval condition transmitted
from each of the plurality of terminal devices by
searching said retrieval target data storage unit
according to the retrieval request expression
variable table generated by said retrieval request
10 expression variable table generation unit; and

each of said plurality of terminal devices
15 further comprises

17. A pattern retrieval program executed by a
pattern retrieval apparatus connected to a
plurality of terminal devices through a network,
comprising:

receiving a retrieval condition, transmitted
25 from each of the plurality of terminal devices

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5      storing the received retrieval condition and
the terminal device information in a retrieval
condition buffer;

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when it is determined that the preceding
retrieving process is not being performed,
generating a retrieval pattern variable table in
which a retrieval pattern and a first variable
having the retrieval pattern as a value are
associated with each other if there are two or more
identical retrieval patterns in the retrieval
patterns stored in the retrieval condition buffer,
excluding retrieval patterns other than one
retrieval pattern;

20 generating a retrieval request expression
variable table in which the retrieval request
expression indicating the retrieval pattern using
the first variable and a second variable having the
retrieval request expression as a value are
25 associated, and the retrieval request expression

5 retrieval expression and the terminal device
information stored in the retrieval condition
buffer unit, and the generated retrieval pattern
variable table;

extracting a retrieval result matching the
10 retrieval condition transmitted from each of the
plurality of terminal devices by searching the
retrieval target database storing the data to be
searched according to the generated retrieval
request expression variable table; and

15 transmitting the extracted retrieval result to
each of the plurality of terminal devices.

18. The pattern retrieval program according to claim 17, wherein

20 said retrieval condition buffer stores the
retrieval condition until it is determined that a
retrieving process is completed.

19. The pattern retrieval program according to
25 claim 17, wherein

5 20. The pattern retrieval program according to
 claim 17, wherein

10 21. The pattern retrieval program according to
claim 17, wherein

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retrieval    target    data    storage    means    for
20  storing data to be searched;

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retrieval condition reception means for receiving a retrieval condition, transmitted from each of the plurality of terminal devices together with the terminal device information for designation of each of the terminal devices,

retrieval condition buffer means for storing
5 the retrieval condition and the terminal device
information received by said retrieval condition
reception means;

retrieval pattern variable table generation means for generating, when said retrieving process determination means determines that the preceding retrieving process is not being performed, a retrieval pattern variable table in which a retrieval pattern and a first variable having the retrieval pattern as a value are associated with each other, if there are two or more identical retrieval patterns in the retrieval patterns stored in said retrieval condition buffer means, excluding the retrieval patterns other than one retrieval pattern;

retrieval request expression variable table
generation means for generating a retrieval request
25 expression variable table in which the retrieval

retrieval means for extracting a retrieval
15 result matching the retrieval condition transmitted
from each of the plurality of terminal devices by
searching said retrieval target data storage means
according to the retrieval request expression
variable table generated by said retrieval request
20 expression variable table generation means; and